REMARKS

Claims 1-25 remain pending. Claims 1-9, 11-13, and 16-24 have been amended. Claim 25 has been added. No new matter has been added. Applicants understand the previous Claim objections have been overcome.

35 U.S.C. Section 101 Rejections

Paragraph 3 of the above referenced Office Action rejects independent Claims 1-8 and 22-24 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicants respectfully disagree. Under In re Bilski, F.3d 943 (Fed Cir. 2008), a claim is patentable subject matter if (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing (emphasis in original). With regard to the tied to a particular machine or apparatus criteria, Applicants point out that Claim 1 recites a prefetcher coupled to a first memory, as claimed (emphasis added). Applicants respectfully assert that a first memory, as claimed, is tied to a machine or apparatus (e.g., a computing system or computing device). Therefore, Applicants respectfully assert that the tied to a particular machine or apparatus criteria has been satisfied.

Further, with regard to the transforms a particular article into a different state or thing criteria, Applicants point out that the In re Bilski court stated that a process transforming data is patentable where such data represents physical and tangible objects. Applicants respectfully point out that Claim 1 recites a tracker configured to use a bit vector to predictively load a target cache line, as claimed. Applicants point out that a bit vector can represent physical and tangible objects. For example, the bit vector can

represent the physical configuration or state of transistors (e.g., on or off) of a microprocessor or memory. Therefore, Applicants respectfully assert that the transforming a particular article into a different state or thing criteria is satisfied and thus Claim 1 is directed to statutory subject matter. Dependent Claims are allowable by virtue of their dependency. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. Section 101 be withdrawn.

As per Claim 22, the rejection alleges that the limitations of Claim 22 are neither computer components nor statutory processes, as they are not "acts" being performed. Applicants respectfully disagree. Applicants point out that Claim 22 recites a device comprising means for limitations which are understood to recite a device having structure. Applicants respectfully direct the Examiner to 35 U.S.C. 112, sixth paragraph, which states an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof (emphasis added). Applicants respectfully direct the Examiner to MPEP 2181 which states a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure described in the specification and equivalents thereof" (MPEP 2181, section II). Thus, Applicants respectfully assert that Claims 1 and 22 is directed to statutory subject matter. Dependent Claims overcome the rejection by virtue of their dependency. Accordingly, Applicants respectfully assert that the claimed invention as recited in Claims 1-8 and 22-24 is directed to statutory subject matter and request withdrawal of the rejection.

35 U.S.C. Section 103(a) Rejections

Paragraph 5 of the above referenced Office Action rejects independent Claim 1 as being unpatentable over U.S. Patent No. 6,625,696 (hereinafter Willke), in further view of U.S. Patent No. 7,065,630 (hereinafter Ledebohm). As such, Applicants respectfully traverse and assert that the independent Claim 1 is not rendered obvious by Willke in view of Ledebohm. Applicants do not concede that Ledebohm is in fact prior art with respect to the instant application. Applicants reserve the right to antedate the Ledebohm reference.

Applicants respectfully point out that the Examiner has the burden of establishing a prima facie case of obviousness. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations (emphasis added). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 2100-126.

Applicants respectfully direct the Examiner to independent Claim 1 which recites in part (emphasis added):

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a tracker within the prefetcher and configured to recognize processor accesses to a plurality of cache lines within a second memory having a second latency less than the first latency, the second memory operable to supply data to the processor responsive to processor data requests, wherein the processor accesses form a stream type sequential access pattern, and wherein further the tracker is configured to use a bit vector to predictively load a target cache line indicated by the stream-type sequential access pattern from the first memory into the second memory for the processor in preparation for the target cache line being requested by the processor as part of the stream-type processor access pattern.

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Independent Claim 9, 18, and 22 recite distinguishing limitations similar to those recited in Claim 1.

Applicants respectfully assert that Willke and Ledebohm, alone or in combination, fail to teach or suggest the limitations of a tracker configured to recognize processor access to a plurality of cache lines within a second memory having a second latency less than the first latency, as claimed. Applicants point out that the cited portion of Willke mentions that control logic 112 monitors requests made by requesting device 100 for data from storage device 120 (Col. 2, lines 48-49) and Willke further mentions that storage device 120 is dynamic random access memory and could also be another form of RAM or a disk storage device as a hard disk (Col. 2, lines 38-42). Further, Applicants point out that the rejection (mailed 2/25/2010) states that storage device 120 which can be DRAM or other type of high latency memory for the request device 100 (emphasis added). Thus, Applicants respectfully assert that Willke does not teach or suggest a tracker configured to recognize processor accesses to a plurality of cache lines within a second memory having a second latency less than the first latency, as claimed.

Moreover, to the extent that Willke may mention that bus 340 couples requesting device (devices capable of initiating a request for data from a storage device) and that

cache memory 330 receives data from storage device 320 and provides data on bus 340 where it can be received by devices coupled to bus 340 (Col. 6, lines 42-51), Applicants respectfully assert that Willke fails to teach or suggest the limitations of a tracker configured to recognize processor accesses to a plurality of cache lines within a second memory having a second latency less than the first latency, as claimed. That is, Applicants respectfully assert that requesting devices of Willke do not access cache memory 330. Applicants respectfully assert that Willke is silent as to a tracker configured to recognize processor accesses to a plurality of cache lines within a second memory having a second latency less than the first latency, as claimed (emphasis added). Applicants respectfully assert that Ledebohm fails to remedy the shortcomings of Willke. Applicants respectfully assert that Ledebohm is silent as to a tracker configured to recognize processor accesses to a plurality of cache lines within a second memory having a second latency less than the first latency, as claimed. Accordingly, Applicants respectfully assert that the cited references fail to render obvious embodiments of the present invention as recited in Claim 1 within the meaning of 35 U.S.C. §103(a).

Independent Claims 9, 18, and 22 are patentable for similar reasons. All related dependent claims are patentable at least by virtue of their dependency.

The above referenced Office Action also rejects Claim 17 under 35 U.S.C. 103(a) as allegedly being unpatentable over Willke, in view of Ledebohm, further in view of Microsoft Computer Dictionary (hereinafter "Microsoft"). Applicants respectfully disagree. Applicants do not concede that Ledebohm is in fact prior art with respect to the instant application. Applicants reserve the right to antedate the Ledebohm reference. For

the reasons stated above, Applicants respectfully submit that independent Claim 9, from which Claim 17 depends, is allowable over Willke and Ledebohm. In addition, Applicants respectfully submit that Microsoft does not remedy the shortcomings of Willke and Ledebohm in that Microsoft fails to teach or suggest the limitations of a tracker configured to recognize processor accesses to a plurality of caches lines within a second memory, as claimed. Therefore, Applicants respectfully assert that the embodiments of the present invention as recited in Claim 17 are not rendered obvious by the cited references within the meaning of 35 U.S.C. 103(a).

The above referenced Office Action rejects Claims 19, 20, and 23 under 35 U.S.C. 103(a) as allegedly being unpatentable over Willke in view of Ledebohm, further in view of Brooks (US 6,081,868). Applicants respectfully disagree. Applicants do not concede that Ledebohm is in fact prior art with respect to the instant application. Applicants reserve the right to antedate the Ledebohm reference. For the reasons stated above, Applicants respectfully submit that independent Claim 18, from which Claims 19 and 20 depend, and independent Claim 22 from which Claims 23 depends are allowable over Willke and Ledebohm. In addition, Applicants respectfully submit that Brooks does not remedy the shortcomings of Willke and Ledebohm in that Brooks fails to teach or suggest the limitations of a tracker configured to recognize processor accesses to a plurality of caches lines within a second memory, as claimed. Therefore, Applicants respectfully assert that the embodiments of the present invention as recited in Claims 19, 20, and 23 are not rendered obvious by the cited references within the meaning of 35 U.S.C. 103(a).

CONCLUSION

The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application. Please charge any additional fees or apply any credits to our PTO deposit account number: 50-4160.

Respectfully submitted,
MURABITO, HAO & BARNES

Dated: May 25, 2010

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